AMENDMENTS TO THE ABSTRACT

Please add the following abstract to the end of the application:

A method for the automated analysis of digital images, particularly for the purpose of assessing mitotic activity from images of histological slides for prognostication of breast cancer. The method includes the steps of identifying the locations of objects within the image which have intensity and size characteristics consistent with mitotic epithelial cell nuclei, taking the darkest 10% of those objects, deriving contours indicating their boundary shape, and smoothing and measuring the curvature around the boundaries using a Probability Density Association Filter (PDAF). The PDAF output is used to compute a measure of any concavity of the boundary – a good indicator of mitosis. Objects are finally classified as representing mitotic nuclei or not, as a function of boundary concavity and mean intensity, by use of a Fisher classifier trained on known examples. Other uses for the method could include the analysis of images of soil samples containing certain types of seeds or other particles.